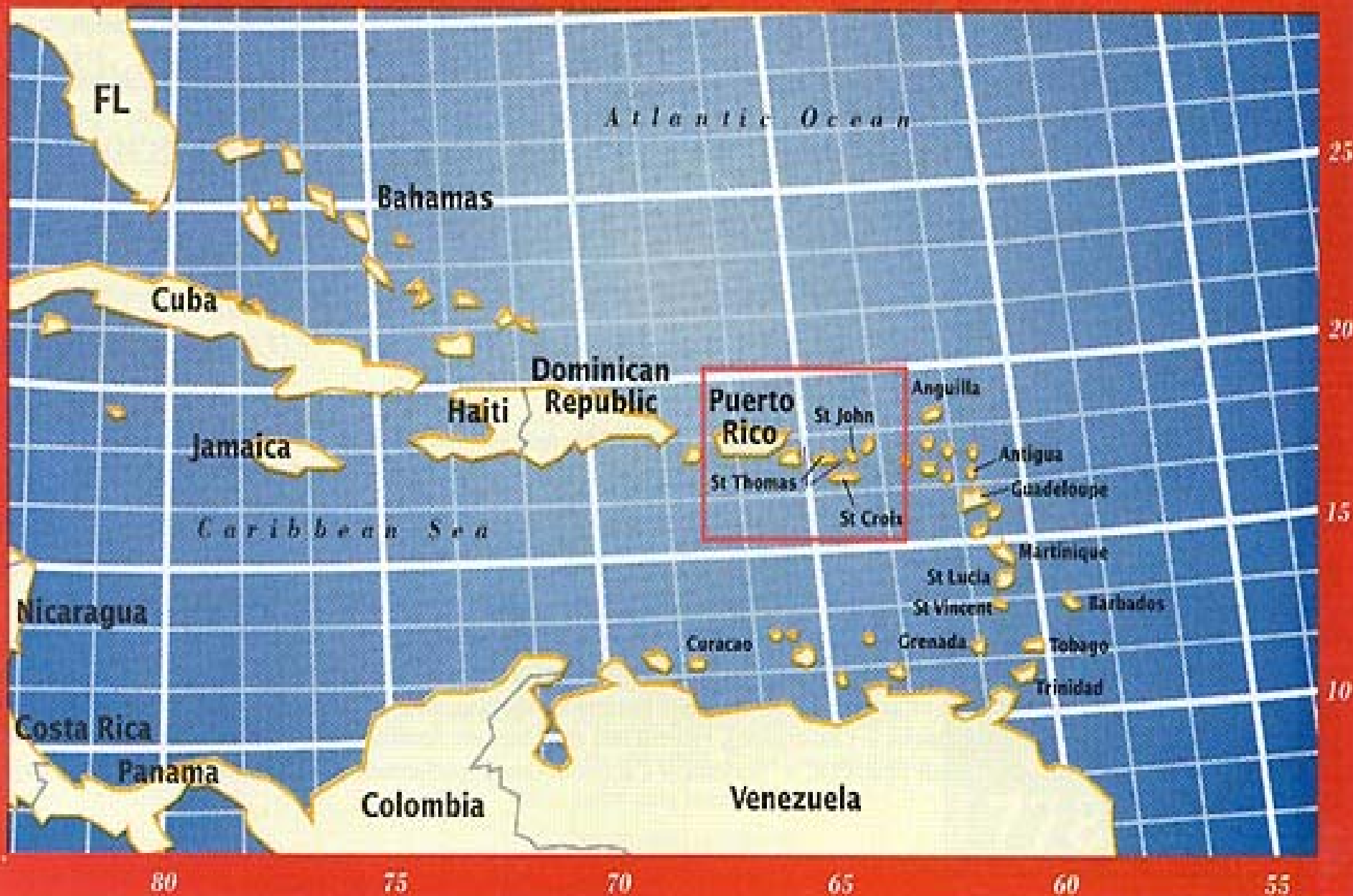


Profiling Fishing Communities in Puerto Rico and The United States Virgin Islands

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Outline of the Presentation

- ☐ Background
- ☐ Where are We
- ☐ What are We Doing
- ☐ Conclusions and Recommendations

Section 1: Background

Research Goal

- ❑ The goal is to understand coral reef ecosystems by incorporating the human dimension into sustainable management strategies.

Why Do We Focus on Humans in Coral Reef Management

- ❑ There is no question that humans have a great impact on the health of the coral reef ecosystems.
- ❑ There is great variability in the manner in which people utilize, manage and perceive coral reef ecosystems.
- ❑ Mandated by Law
- ❑ Orbach (2003) suggests that fishery policy must be seen as a set of social, economic and biological trade-offs.



Connection Between Humans and Coral Reef Ecosystems

- ❑ Managing Sustainable Coral Reef Ecosystems should be viewed as a multi-disciplinary effort, including principles of conservation as well as utilization.
- ❑ In order to do this, biological, economic and social data are needed, especially if managers are attempting to assess the current condition of the fishery and the potential impact of future regulations.
- ❑ Community profiling is the most effective strategy for acquiring the necessary social data.



Legal Instruments Requiring Social Impact Analysis

- ❑ National Coral Reef Conservation Act
- ❑ Magnuson-Stevens Fishery Conservation Management Act; National Standard 8
- ❑ National Environmental Policy Act
- ❑ Executive Order 12898; Environmental Justice
- ❑ Ultimately these instruments recognize the need to understand the potential social and economic impacts of a regulation. The purpose is to provide managers with the understanding of how certain management scenarios will positively or negatively impact humans and the resources, hence the “trade-offs” as Orbach (2003) suggests.

Research Objectives

- ❑ Create profiles of fishing community in PR and USVI.
- ❑ Evaluate the effectiveness of Marine Protected Areas



Section 2: Where are We

Research Framework

□ Conceptual Component

- Develop research methodology to define and identify fishing communities, using both “place” and “non-place” definitions.

□ Applied Component

- Profile Fishing Communities
- Assess socio-economic impacts of MPAs

Tasks Completed

- ☑ Scope of Work Created for PR and USVI
- ☑ Project contracted to Aguirre International for western half of Puerto Rico
- ☑ Project contracted to Impact Assessment, Inc. for the USVI
- ☑ Financial support awarded for SEFSC SSRG to conduct the survey in St. Croix
- ☑ Conducted meetings with contractors to discuss timelines, research designs and research objectives
- ☑ Contractors have made initial field visits to test instruments, make contacts, and conduct preliminary cultural mapping exercises.
- ☑ Contractors have conducted preliminary literature research.
- ☑ Contractors have acquired census, labor and fisheries data.
- ☑ Submitted a proposal for the second half of the Puerto Rico research.
- ☑ Formal survey created
- ☑ OMB package has been developed and sent (awaiting approval)

Tasks Still To Be Accomplished

- ❑ The majority of the ethnographic work for Phase 1 is still to be completed. This relates to identifying and profiling fishing communities in the western half of PR and all of the USVI
- ❑ Phase 2 consists of administering the formal survey and this will take place upon completion of Phase 1 in each location.
- ❑ Analysis and report write-up for this research effort
- ❑ With future funding, a contract will be awarded to identify and profile fishing communities on the eastern half of PR, including Culebra and Vieques, as well as administering the formal survey.

What are We Doing

Methods

(Primary Data)

- ❑ Interviews on a variety of issues related to fishing and community development
 - Formal and informal interviewing techniques
 - Individual and group (focus group)
 - In-depth key informant
 - Oral histories
- ❑ Cultural Mapping
- ❑ Community Photography
- ❑ Formal Survey: Standardized collection of quantitative and qualitative data to be compared across the region and time

Methods

(Secondary Data)

- ❑ Census and Department of Labor Information
(Looking specifically at trends or significant changes in the following kinds of variables)
 - Population increase or decrease
 - Ethnicity
 - Age
 - Education
 - Income
 - Employment
 - Industry
 - Housing Use and Value

Methods

(Secondary Data)

- ❑ Fishery statistics on number of licensed commercial fishermen, gear and species landed and sold.
- ❑ GIS Mapping
 - Mapping locations of fishermen
 - Mapping locations of markets
 - Mapping locations of ports
 - Mapping locations of fishing activities

Community Profiling

- ❑ Identify fishing communities and their level of engagement and dependency on all kinds of fishing and activities associated with fishing.
- ❑ Describe Fishers: Who, why, where, what, when and how of fishing
- ❑ Identify the social and economic networks impacted by fishing, i.e. processors, marketers, bait shops/tackle, restaurants, hotels etc.
- ❑ Identify non-fishing related factors that affect fishing – Gentrification, mangrove deforestation, coastal development, pollution and agricultural run-off
- ❑ Local knowledge about the resource: Creating comanagement or at least some level encouraging participation of fishers in the management process

Identifying Current Fishing Communities and Their Level of Dependency and Engagement

- ❑ Fishing communities have a specific definition however the line between what constitutes a fishing community is still subjective.
- ❑ It is based on the difference between dependency and engagement, which also have specific definitions but are subjective in the manner in the way some communities are placed into one category or the other.
- ❑ Currently, the social scientists at NOAA Fisheries have been working on a standardized set of variables and a mechanism for weighting these variables in the classification of fishing communities with regards to dependency and engagement.
- ❑ Dependency and engagement can best be described in an example comparing two United States fishing ports, Wanchese, North Carolina and Atlantic City, NJ

Fishers

□ Who

- Who are these people, native or non-native
- Who are the crew – what is the relationship between owner/captain/crew
- Gender -- are there specific sectors of the fisheries that are dominated or controlled by men or women. For example, catching fish as opposed to marketing them

□ Why

- Why do people fish – income, pleasure, food
- Why do people engage in fishing rather than pursuing to other economic opportunities or what other opportunities do they pursue in addition to fishing
- Why do they select the targeting strategies they do



Fishers

□ Where

- Where are people fishing, checking seasonal variation and adaptation to ideal and inclement weather conditions
- Where they live, dock, land and market fish
- Where do the fish go after being sold

□ What

- What do they fish for
- What gear do they use
- What is their economic impact within the community– are they distributing/consuming fish locally or is it leaving the community
- What types of things do they do to protect the resources
- What are the major policies that impact the way they fish



Fishers

□ When

- When do they fish: Annual Round
- When do they engage in other income generating activities
- When did they begin fishing

□ How

- How do they handle conflicts; personal, gear, or otherwise
- How do they adapt to changes in the environment
- How do they respond to changes in the community, i.e. increased development, tourism, gentrification, employment opportunities
- How do they cooperate with one another; i.e. information sharing
- How are they involved in the policy process
- How do they perceive the future of fishing



Identification of Social and Economic Networks

□ Directly Impacted

- Family: work, income, food sharing, risk
- Community: work, income, food sharing, fishing associations, marinas
- Occupational: processors, marketers, distributors, various suppliers (bait/tackle/supplies), fishing associations, clientele (for hire industry)

Local Knowledge and Policy

- ❑ What are the benefits for including local knowledge in coral reef management.
 - Often fishers knowledge of an ecosystem is based on the accumulation of multiple generations of use and observation
 - Historical account of changes in the fisheries as well as the environment, and how people have adapted to changes.
 - Historical account of management and its effectiveness on creating a sustainable fishery
 - Knowledge of what types of management measures are likely to be culturally appropriate and adhered to by fishermen
 - Most fishers experience is based on a multi-species perspective, which mean that they are sometimes better able to see how regulatory change in one fishery will affect another. In these instances they can often develop recommendations for how best to manage the fishery that might not have been thought of in the single species approach to management
 - The best perception of how various management options may impact fishers, the community and the fishery

Evaluation of the Effectiveness of MPAs

- ☐ Fishers perceptions of effectiveness of MPAs
- ☐ Based on observations and information sharing a knowledge of compliance
- ☐ Based on observations and information sharing a perception of the impact on the resource, i.e. are there more fish
- ☐ Based on observations and information sharing a perception of how the MPA has impacted their fishing practices, i.e. displacement of fishers into other areas

Research Products

- ❑ Completed community profiles that:
 - Document socio-economic conditions of the community
 - Establish a baseline of household and community demographics
- ❑ MPA Evaluation will:
 - Document factors that influence their success.
 - Improve understanding of weakness and strengths of current and future management strategies

Conclusions and Recommendations

Conclusions and Recommendations

- ❑ The initial task is immense and requires a tremendous amount of effort and support and we are thankful that the Coral Reef program has recognized the importance of this effort.
- ❑ The product produced is invaluable for fisheries management for it provides critical information about coral reef use and human dependency
- ❑ The goal is to update the data base every four to five years using at a minimum the same standardized survey and Rapid Ethnographic Appraisal Procedures to document trends and changes in the fisheries and communities, across time and space.

Conclusions and Recommendations

- ❑ Must remember that 95% of the World's fishers are small-scale, like the majority of fishers in Puerto Rico and the USVI
 - 20 million primary producers
 - 20 million small scale processors, marketers and distributors
 - In combination with ancillary workers as well as dependants, small scale fishing supports 200 million people worldwide

- ❑ In developing countries coral reefs contribute about one fourth the total fishing catch, providing an important food source for millions of people.

Conclusions and Recommendations

- ❑ This is the reason why the study of fishers and their social and economic networks is so critical to coral reef management
- ❑ An important component of managing coral reefs is managing and understanding the human impacts on those resources, for there is competition for them even outside of the fishing spectrum and there are human impacts on coral reefs that are not related to them .
- ❑ Without an understanding of who these people are and the level to which they are engaged in and dependent on the resources, managers risk creating culturally inappropriate policies that place people and the coral reef resources at greater risk.